



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/711,326

09/10/2004

Takahiro Nakano

SIC-04-034

5325

29863

7590

01/13/2009

DELAND LAW OFFICE

P.O. BOX 69

KLAMATH RIVER, CA 96050-0069

EXAMINER

IRVIN, THOMAS W

ART UNIT

PAPER NUMBER

3657

MAIL DATE

DELIVERY MODE

01/13/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/711,326	Applicant(s) NAKANO ET AL.	
	Examiner THOMAS W. IRVIN	Art Unit 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-16 is/are rejected.
- 7) ☒ Claim(s) 17, 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3-12, 15, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the relationship between the radially inwardly extending spline and the radially outer surface facing radially outwardly is not clear, as it is not understood how a spline extending radially inward would possess a radially outer surface facing radially outwardly.

Claim Rejections - 35 USC § 102

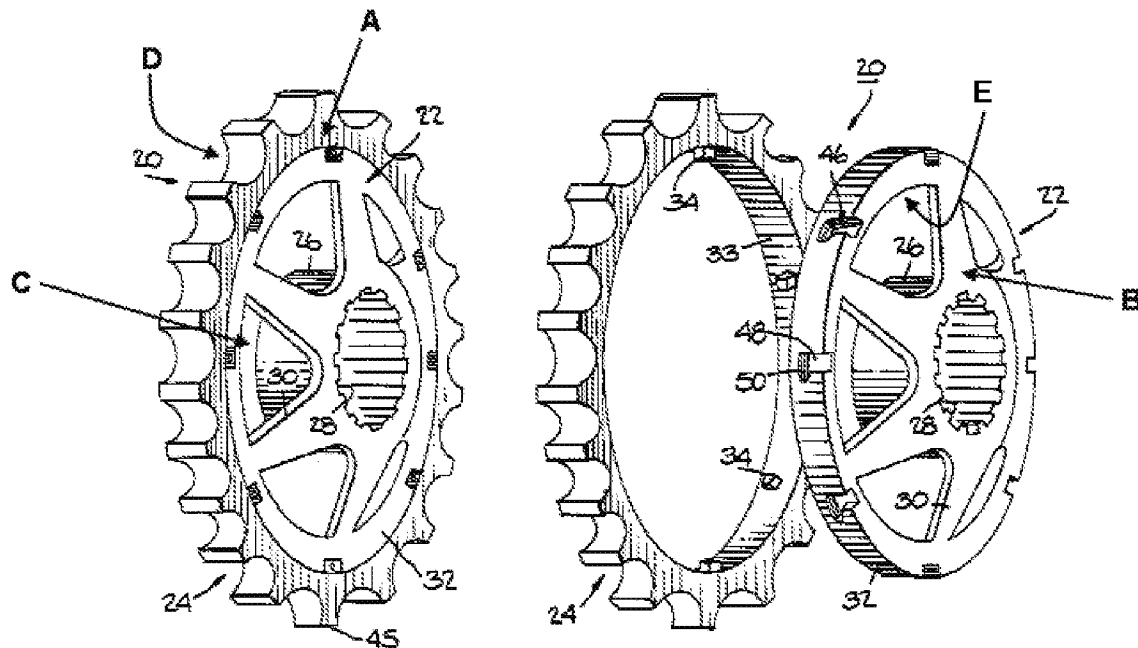
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3-11, and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Militana (3,168,836).



Figs. 1 and 2 (US Patent 3,168,836)

In Re claim 1, with reference to Figs. 1 and 2 shown above, Militana discloses a sprocket, wherein the sprocket comprises: a sprocket body (20); a plurality of teeth (45) extending radially outwardly from the sprocket body; a spline (28) extending radially inwardly from the sprocket body; wherein the spline includes a radially outer surface (26) facing radially outwardly; and wherein the radially outer surface of the spline faces a radially inner surface (E) of the sprocket body.

In Re claim 3, the inner surface is substantially straight in a direction of the rotational axis.

In Re claim 4, the inner surface is substantially parallel to the rotational axis.

In Re claim 5, the sprocket body has a side wall that includes a first side wall portion (A) and a second side wall portion (B), wherein the plurality of teeth extend radially outwardly from the first side wall portion, and wherein the second side wall portion is laterally offset from the first side wall portion.

In Re claim 6, the second side wall portion overlaps the outer surface (26) when viewed in a direction parallel to the rotational axis.

In Re claim 7, the second side wall portion is spaced apart from the first side wall portion in a direction of the rotational axis.

In Re claim 8, the spline is offset from the first side wall portion in a direction of the rotational axis.

In Re claim 9, the spline extends from the second side wall portion and terminates at a free end (C), and the free end is spaced apart from a first side wall (D) of the first side wall portion (A) that faces in a same direction as the free end.

In Re claim 10, the sprocket body has a side wall that includes a first side wall portion (A) and a second side wall portion (B), wherein the plurality of teeth extend radially outwardly from the first side wall portion. It is the examiner's understanding that the second side wall portion and the spline together form a composite spline.

In Re claim 11, a thickness of the spline in a direction of the rotational axis is greater than a thickness of the second side wall portion in a direction of the rotational axis.

In Re claim 13, with reference to Figs. 1 and 2 shown above, Militana discloses a bicycle sprocket, wherein the sprocket comprises: a sprocket body (20); a plurality of

Art Unit: 3657

teeth (45) extending radially outwardly from the sprocket body; a spline (28) extending radially inwardly from the sprocket body, wherein the spline has a root portion (30) and a radially inner portion (26), wherein the root portion extends radially inwardly of the sprocket body and has a side wall (B) facing in a rotational direction, and wherein the radially inner portion extends radially inwardly of the root portion and has a side wall (C) facing in the rotational direction; and wherein a thickness of the radially inner portion of the spline in a direction parallel to the rotational axis is greater than a thickness of the root portion of the spline in a direction of the rotational axis.

Claims 1, 3-5, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Lim et al. (2001/0039224).

In Re claim 1, Lim et al. disclose a one-piece bicycle sprocket (21) adapted to rotate around a rotational axis, wherein the sprocket comprises: a sprocket body; a plurality of teeth extending radially outwardly from the sprocket body and dimensioned to engage a bicycle chain; a spline extending radially inwardly from the sprocket body; wherein the spline includes a radially outer surface facing radially outwardly; and wherein the radially outer surface of the spline faces a radially inner surface of the sprocket body (see Fig. 5). The examiner defines the radially inner surface of the six openings of the sprocket to be the radially outer surface of the spline, which face a radially inward facing outer surface of the six openings of the sprocket.

In Re claim 3, the inner surface is substantially straight in a direction of the rotational axis.

In Re claim 4, the inner surface is substantially parallel to the rotational axis.

In Re claims 5 and 10, the sprocket body has a side wall that includes a first side wall portion and a second side wall portion, left and right sides of the sprocket, wherein the plurality of teeth extend radially outwardly from the first side wall portion, and wherein the second side wall portion is laterally offset from the first side wall portion. It is believed that the second side wall portion and the spline together form a composite spline.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Militana (3,168,836).

Militana fails to teach the thickness of the root portion being substantially equal to the thickness of the first side wall portion. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the thickness of the root portion substantially equal to the thickness of the first side wall portion to increase the strength and rigidity of the sprocket body.

Allowable Subject Matter

Claims 15 and 16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 17 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed June 10, 2008 have been fully considered but they are not persuasive.

In response to applicant's arguments concerning the definition of spline and the rejections by Militana and Lim et al., the examiner's interpretation of the spline claimed is based upon what is claimed, it is noted that the features upon which applicant relies (i.e., the root portion and radially inner portion) are not recited in the rejected claim(s) in such a way to define over the sprocket of Militana. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Additionally, it is noted that the features upon which applicant relies (i.e., the radially outer surface of the spline) are not recited in the rejected claim(s) in such a way to define over the sprocket of Lim et al. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988

Art Unit: 3657

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The examiner continues to hold the position that the radially innermost ring of Lim et al. and the hub of Militana meet the claimed limitations regarding the structure of the sprocket and associated spline features. Additionally, the examiner points out that claim 13 does not limit the spline to only originating radially inwardly from the sprocket body. The examiner notes that it appears that applicant is assigning more definition and limitation to the term “spline” than the “plain meaning”.

In response to applicant’s arguments that Militana and Lim et al. do not have the “radially inwardly facing spline” and the “radially outer surface facing radially outwardly”, both references appear to have these features, as pointed to in the rejections above, in the same manner claimed. Applicant has not clearly shown how the references lack these features, and therefore they are understood to be substantially the same in that aspect.

In response to applicant’s arguments concerning “one-piece”, the examiner continues to believe that in an assembled state, the sprocket assemblies of Lim et al. and Militana form a single piece. Examiner notes that this limitation has been deleted from claims 1 and 13 though. The examiner suggests that, if applicant wanted this limitation to be re-included, the claims be amended to include that the apparatus was formed as a one-piece body.

In response to applicant’s arguments concerning claims 12 and 14, the examiner disagrees with applicant, and maintains that increasing the thickness of the root portion, spokes (30), of Militana, would increase the strength of the spokes as they would be

Art Unit: 3657

more robust and have a greater contact area with the outer portion (22) and hub (26), thus enabling them to transmit greater torque before the likelihood of warping or fracturing.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to THOMAS W. IRVIN whose telephone number is (571)270-3095. The examiner can normally be reached on Mon-Fri 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3657

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas W. Irvin/
Examiner, Art Unit 3657

/Robert A. Siconolfi/
Supervisory Patent Examiner, Art
Unit 3657